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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,063	11/13/2001	Randall Melton	TI-28388	3889

23494 7590 06/24/2004

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EXAMINER

YENKE, BRIAN P

ART UNIT PAPER NUMBER

2614

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,063

Applicant(s)

MELTON, RANDALL

Examiner

BRIAN P. YENKE

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on PreAmendment 13 Nov 01.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 9 is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-12 and 14 is/are rejected.
- 7) ☒ Claim(s) 4-9, 13 and 15-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The specification (page 20) refers Appendix A for a detailed listing of the pseudo-code, however, there is no Appendix A enclosed in the application. The examiner believes Appendix A is actually a reference to the submitted drawings (Figures 17a/b/c/d/e). Thus the examiner requests the correction; a) by amending the specification to Figures 17a/b/c/d/e instead of Appendix A or b) by sending a copy of Appendix A (if the Appendix is not the Figures).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2a. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al., US 5,532,765.

In considering claims 1-2,

a) turning on a grid pattern of pixels... is met by the test signal pattern 209 (Fig 14)

b) capturing an image of said pixel... is met by imaging device 2 (Fig 1)/CCD camera 14 (Fig 5)

d)/e)/f) selecting a test pixel... is met where a specific sample (S20) Fig 18B is used as a reference point in calculating geometric distortion (col 13, line 66 to col 14, line 4).

g) repeating the convergence procedure for at least one other location... is met where the correction regions of the display may consists of nine or more regions (col 18, line 27-39).

However, Inoue discloses the use of one camera and the use of a CRT system (no modulator) where the convergence/correction data is computed based on each color (rgb). Thus Inoue does not disclose (limitation c) where each captured image is separated for each modulator, since the CRT system does not include modulators.

The use of multiple cameras in analyzing a projected image is conventional in the art, and thus the examiner takes "OFFICIAL NOTICE" to such a feature.

It is also known that a projection device can utilize the use of CRT's, or light-valve/modulator based systems (i.e. LCD, DMD) in projecting an image for display. As disclosed in applicant's admitted prior art, the use of the DMD projection display are conventional in the art. Therefore, the use of a CRT's or DMD's for a display are options in which a designer can choose from, since both are well known and readily available.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Inoue which discloses a image correction system using a displayed test signal, where the convergence of the red, green and blue colors are convergence corrected, by optionally using a modulator based system in lieu of the CRT system, and the use of more than one camera, which would provide the designer the ability to correct for non-CRT projection displays.

In considering claim 3,

Inoue does not explicitly disclose the use of a test image at the center of the projected image where at least 4 additional captured image are located near the perimeter of said projected image.

However, as stated above, Inoue discloses the use of one imaging device 2/camera 14, and as stated above, it is conventional to utilize more than one camera in analyzing a displayed image/test pattern. Therefore, the number of additional captured images located near the test image, would be a design choice based upon the number of cameras used.

2b. Claims 10-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Surati et al., US 6,456,339.

In considering claim 10 and 12,

c) the claimed a frame grabber... is met by computer 18 (Fig 1) which preferably includes a frame grabber (col 10, line 56 to col 11, line 3).

d) the claimed a computer receiving image data... is met by computer 18 which corrects for pixel misalignment of projected overlapping pixel arrays and blends the overlapping projection regions (Fig 1).

However Surati does not disclose the use of at least 3 CCD cameras and a multiplexer nor focus measurements.

Surati does however, disclose that multiple cameras may be used (col 17, line 64 to col 18 line 4). Therefore, in the event more than one camera was used the implementation of a multiplexer to switch between camera inputs would be an obvious feature of the system.

The focus measuring of a system is notoriously well known in order to adequately corrected for the display in a projection system, and thus the examiner takes "OFFICIAL NOTICE" to such a feature.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Surati which discloses a super-resolution display selectively drives the display while sensing the output by optionally using at least cameras via a multiplexer to sense the displayed images and also corrected for the focus of the projection system, in order to provide the viewer a super-resolution display with little or no errors.

In considering claim 11,

Surati does not explicitly disclose the use of a test image at the center of the projected image where at least 4 additional captured image are located near the perimeter of said projected image.

However, as stated above, Surati discloses the use multiple cameras, and it is also conventional to utilize more than one camera in analyzing a displayed image/test pattern. Therefore, the number of additional captured images located near the test image, would be a design choice based upon the number of cameras used.

In considering claim 14,

The claimed wherein said separated captured images are normalized to maximum level is met by threshold 49 (Fig 6), where the captured images in each entry is a one if the corresponding pixel value in the bitmap 47 is greater than or equal to a threshold value (col 12, line 52-59).

Allowable Subject Matter

3. Claims 8-9 allowed.

Claims 4-7, 13 and 15-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure—see cited references on attached form PTO-892.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or

relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)305-HELP.

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800-PTO-9199 or 703-308-HELP

(FAX) 703-305-7786

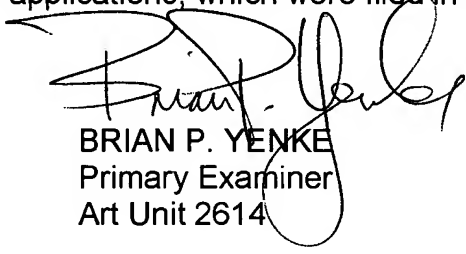
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BRIAN P. YENKE
Primary Examiner
Art Unit 2614



B.P.Y.

22 June 2004